BAAQMD Regulatory Update

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

San Francisco Bay Area

9 Counties

6000 Miles

1955	2002
3 Million People	7 Million People
1.7 Million Cars	5.1 Million Cars
35 Million Vehicle Miles Driven Daily	126 Million Vehicle Miles Driven Daily

Criteria Pollutants

Federal and State

- Ozone
- Carbon Monoxide
- Nitrogen Dioxide
- Sulfur Dioxide
- Particulate Matter
- Lead

Additional State

- Hydrogen Sulfide
- Vinyl Chloride
- Sulfates

Why Ozone?

- Health effects are well documented
- Standards established to protect sensitive population
- Impairs lung function
- Damages crops
- Region is currently out of attainment

How is Ground-Level O3 Harmful?

- Irritates the respiratory system
  - coughing, throat irritation, uncomfortable sensation in your chest
- Inflames and damages cells that line the lungs
  - aggravates chronic lung diseases, such as asthma, emphysema and bronchitis
- Effects can be worse in children, those with lung ailments and exercising adults
- Reduces plant growth and temporarily cuts photosynthesis rates

Why is Ozone harmful?

- Highly reactive form of oxygen
- Reactivity causes Ozone to oxidize with internal body tissues
- Reactivity also causes it to oxidize certain materials, such as rubber

Ozone precursors

Volatile Organics

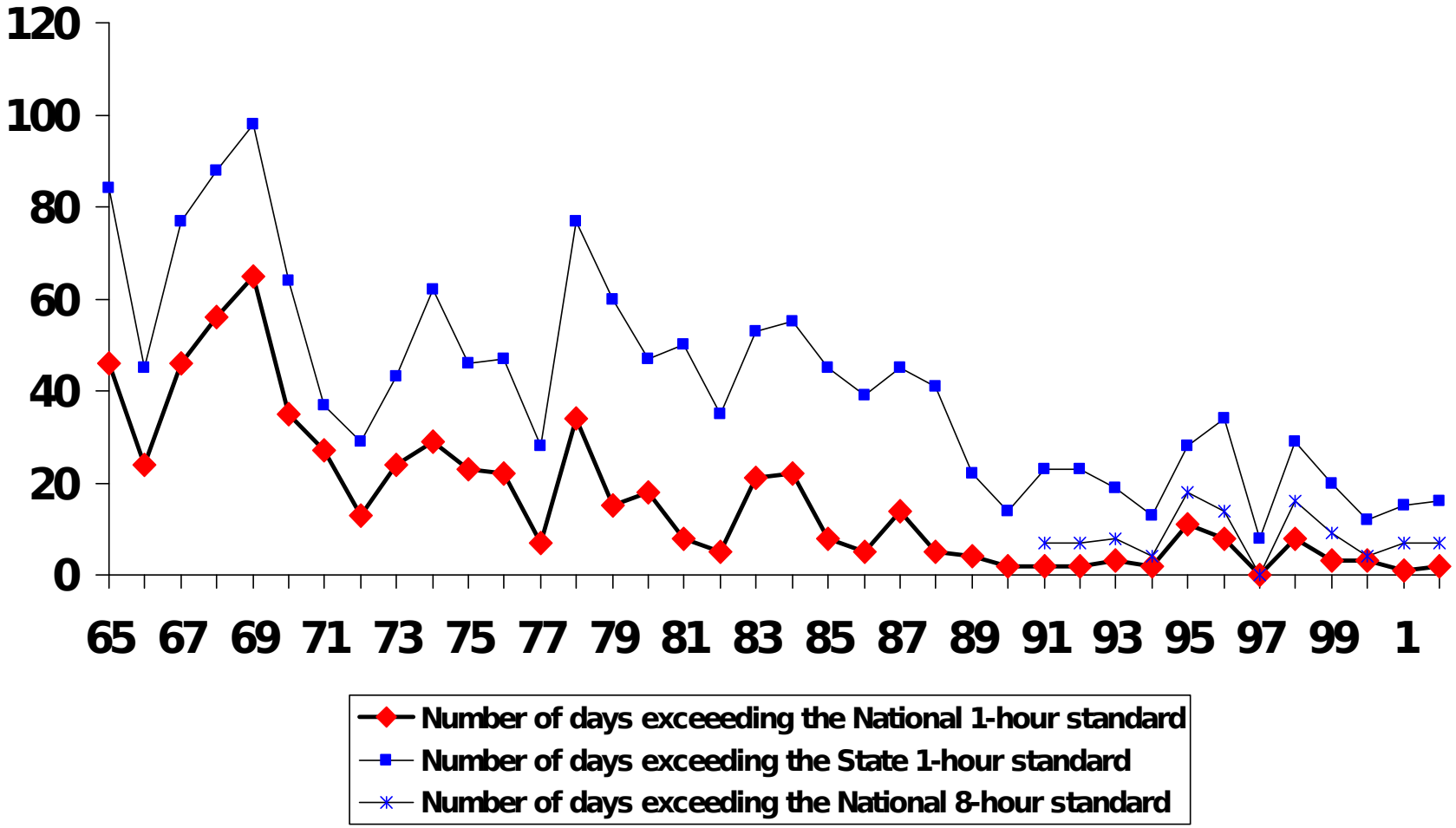
- Paints
- Varnishes
- Solvents
- Consumer Products
  - household cleaners
  - aerosol sprays, lighter fluid

Oxides of Nitrogen

By-product of combustion

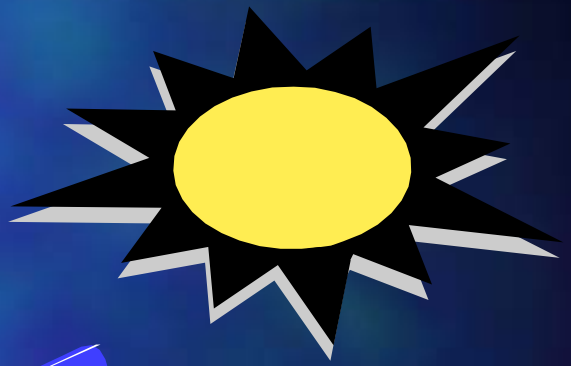
- Motor Vehicle Exhaust
- Refineries
- Power Plants
- Boilers

BAAQMD 1965 - 2002 Ozone Experience



Summer Daily Emissions
(2002 BAAQMD DATA)

- VOCs
  - Mobile sources
    - 319 tons/day
  - Stationary sources
    - 86 tons/day
- NOx
  - Mobile sources
    - 552 tons/day
  - Stationary sources
    - 76 tons/day



Stationary Source Control Measures 2001 Ozone Attainment Plan

- Improved Architectural Coatings Rule
- Improved Storage of Organic Liquids Rule
- Surface Preparation and Cleanup Standards for Metal Parts
- Aqueous Solvents
- And Three Refinery-Specific Rule Changes
- **Estimated VOC reduction: 8.28 tpd**

Mobile Source Control Measures 2001 Ozone Attainment Plan

- Enhanced Motor Vehicle Inspection and Maintenance Program
  - Liquid Leak Inspection and Improved Evaporative System Test

Transporatation Measures
2001 Ozone Attainment Plan

- 90 low emission buses to operate new or enhanced express bus systems
  - buses will meet all CARB standards and will include particulate traps
- Bicycle/Pedestrian Program
- Transportation for Livable Communities
- Freeway Service Patrol

Further Study Measures
2001 Ozone Attainment Plan

- Particulate Trap Retrofit Program
- Update High Occupancy Vehicle (HOV) Lane Master Plan
- Study Effects of High-Speed Freeway Travel
- Parking Charge Incentive Program

Further Study Measures
2001 Ozone Attainment Plan

- Enhanced Housing Incentive Program
- Parking Cash-Out Program
- Organic Liquid Storage Tanks
- Marine Tank Vessel Activities
- And Two Refinery Measures

Existing BAAQMD Air Toxics Risk Management Policy

- Local Program
  - BAAQMD program began in 1987
  - Applies to permitted new/modified sources
  - Risk Screening Procedure/Risk Management Policy
- Risk Screening Procedure
  - Uses Air Toxics Hot Spots Program HRA Guidelines
  - Air concentrations estimated by dispersion modeling
- Risk Management Policy
  - Best Available Control Technology for Toxics
    - Max. lifetime cancer risk > 1 in one million
    - Max. chronic non-cancer hazard index >1.0
  - Limits on project risk
    - 10 in one million lifetime cancer risk
    - Chronic non-cancer hazard index = 1.0
  - Policies for dry cleaners, diesel engines

BAAQMD Reg. 2, Rule 5: New Source Review of Toxic Air Contaminants

- **Toxics NSR Program Goals**
  - Avoid significant increases in health risks from proposed projects
  - Provide net health risk benefits from source replacements
  - Consider site-specific factors that affect health risks
  - Minimize applicant costs related to preparation of Health Risk Assessments (HRAs)
- **Goals of Toxics NSR Rule Development**
  - Increase guideline conformity
  - Enhance legal defensibility
  - Increase program visibility
- Rule Development Schedule
  - Workshops in early 2003
  - Adoption in 2003

Contact: Brian Bateman 415 749 4653
bbateman@baaqmd.gov

Particulate Matter

- Also referred to as “Small Particle” pollution
- Consists of solid or liquid material
  - dust, soot, ash, mist, smoke
- Problematic because small particles may be suspended for long periods of time and are inhalable

Health Effects of PM2.5

- Mortality - respiratory and cardiovascular causes
  - Premature death in individuals with existing heart or lung diseases
- Morbidity – respiratory and cardiovascular diseases
  - Hospital admissions: respiratory, pneumonia, heart disease
  - Indirect measures of acute respiratory conditions: school absences, work loss days, reduced activity days

Why is it harmful?

Both PM10 (big) and PM2.5 (small) particles can cause health problems; specifically respiratory health (that's the lungs and airway). Because the PM2.5 travels deeper into the lungs AND because the PM2.5 is made up things that are more toxic (like heavy metals and cancer causing organic compounds), PM2.5 can have worse health effects than the bigger PM10.

Sources of PM in the Bay Area

- Motor Vehicle Exhaust
- Woodburning Fireplaces
- Industrial Processes
- Restaurants
- Construction Sites
- Natural Sources

Spare the Air:
A Voluntary Program

Getting residents to make ***Clean Air Choices,*** especially on days when the air is bad, is a large part of the Air District's mission!

Thinking Outside the Regulatory Box

- Change-out dirty diesel generators for cleaner technology.
- Replace fleets with LEVs or ZEVs--choose an infrastructure that suits your needs.
- Look towards the future: FUEL CELLS

Urban Heat Islands

- On warm summer days, the air in urban areas can be 6-8°F hotter than its surrounding areas. Scientists call these cities "urban heat islands."
  What Are Problems with the "Heat Island Effect?"
  - The higher temperatures in urban heat islands increases air conditioning and raises pollution levels.
- Solution: Replace dark asphalt and rooftops with lighter colors.

Air District Information

- www.baaqmd.gov
- www.sparetheair.gov
- 2001 Ozone Attainment Plan
  - Henry Hilken hhilken@baaqmd.gov
- Toxic Rule (Reg. 2 Rule 5)
  - Brian Bateman bbateman@baaqmd.gov
- Public Information
  - Luna Salaver lsalaver@baaqmd.gov